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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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04/09/2004

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53724 7590 05/04/2007  
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EXAMINER

NI, SUHAN

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

05/04/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/821,521	<b>Applicant(s)</b> NGUYEN ET AL.	
	<b>Examiner</b> Suhan Ni	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-46,66 and 67 is/are pending in the application.
- 4a) Of the above claim(s) 47-65 and 68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-46,66 and 67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/27/04; 4/25/05; 12/2/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Election/Restriction***

1. This communication is responsive to the provisional election made without traverse on 01/08/2007 to prosecute the invention of Group I, claims 1-46 and 66-67. Other Groups, including claims 47-65 and 68 are withdrawn from further consideration, as being drawn to a non-elected invention. A complete reply to a future final office action must include cancellation of non-elected claims or other appropriate action (37 CFR 1.144). See MPEP § 821.01.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed limitations of “**at least one cone-type transducer**” in claim 45 and “**a crossover**” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the

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drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 44-46 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 44-46 claim the limitation of “**a loudspeaker**” which fails to limit the subject matter of the previous claim, claim 1, claiming “**an acoustic transducer**”.

### ***Claim Rejections - 35 USC § 112, 2<sup>nd</sup> Paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 2-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 2-44, it recites the limitation “the low-profile transducer” in line 1. There is insufficient antecedent basis for this limitation in the claim.

Regarding claims 45-46, it recites the limitation “the low-profile transducer” in line 1. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 42, it recites the limitation “the fin” in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1-4, 7-8, 13-15, 26-27, 30-32, 34-39 and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Carme et al. (U. S. Pat. - 6,285,773).

Regarding claim 1, Carme et al. disclose an acoustic transducer comprising: a frame (2); a diaphragm (7) having a substantially planar projection surface, where the diaphragm is operatively attached to the frame (Fig. 2); a magnet structure (3-5) mounted on the frame, where the magnet structure produces a magnetic-field region; and an electrically conductive voice coil (13) coupled to the diaphragm and extending out of a plane of the projection surface; where the voice coil resides at least partially in the magnetic-field region as claimed.

Regarding claim 2, Carme et al. further disclose **the acoustic transducer**, where the magnet structure includes a pole surface (4), and where a distance between the pole surface and the voice coil is substantially constant during excursions of the voice coil.

Regarding claim 3, Carme et al. further disclose **the acoustic transducer**, where the magnetic-field region is substantially uniform (Fig. 2) throughout an excursion region of the voice coil.

Regarding claim 4, Carme et al. further disclose **the acoustic transducer**, where the voice coil has a substantially fiat structure in the magnetic-field region, and where a plane of the

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voice coil in the magnetic-field region is substantially perpendicular to a magnetic field in the magnetic-field region (Figs. 2-3).

Regarding claims 7-8, Carne et al. further disclose the acoustic transducer, where the frame comprises a ferromagnetic material and the flame comprises a ferromagnetic material, and where the frame provides a return path for a magnetic field generated by the magnet structure (Fig. 2).

Regarding claims 13-15, Carne et al. further disclose the acoustic transducer, where the flame (2) has a substantially crenellated shape and includes a groove (Figs. 2-3).

Regarding claims 26-27, Carne et al. further disclose the acoustic transducer, where the projection surface of the diaphragm is operatively attached to the frame (Fig. 2) as claimed.

Regarding claims 30-32 and 34, Carne et al. further disclose the acoustic transducer, where the magnet structure (3-5) comprises at least two stationary magnets having two magnetic-field regions as claimed.

Regarding claims 35-39, Carne et al. further disclose the acoustic transducer, where the frame has a substantially crenellated shape, and where the magnet structure includes a magnet attached to a portion of the crenellated frame (Fig. 2).

Regarding claim 44, Carne et al. further disclose the acoustic transducer, wherein said acoustic transducer (1) is utilized in a linear loudspeaker.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Sawafuji (U. S. Pat. - 4,544,805).

Regarding claim 1, Sawafuji discloses an acoustic transducer comprising: a frame (1); a diaphragm (23) having a substantially planar projection surface, where the diaphragm is operatively attached to the frame (Fig. 7); a magnet structure (6) mounted on the frame, where

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the magnet structure produces a magnetic-field region; and an electrically conductive voice coil (29) coupled to the diaphragm and extending out of a plane of the projection surface; where the voice coil resides at least partially in the magnetic-field region as claimed.

7. Claims 1, 5-6, 16-25, 28-29, 40-42 and 66-67 are rejected under 35 U.S.C. 102(b) as being anticipated by Larson (U. S. Pat. - 4,536,623).

Regarding claim 1, Larson discloses an acoustic transducer comprising: a frame (16); a diaphragm (32) having a substantially planar projection surface, where the diaphragm is operatively attached to the frame (Fig. 1); a magnet structure (14) mounted on the frame, where the magnet structure produces a magnetic-field region; and an electrically conductive voice coil (192, 194, 198) coupled to the diaphragm and extending out of a plane of the projection surface; where the voice coil resides at least partially in the magnetic-field region as claimed.

Regarding claims 5-6, Larson further discloses the acoustic transducer, comprising: a fin (186) having a first edge and an opposing second edge, where the first edge of the fin is attached to the projection surface, the fin extends in a direction away from the projection surface and into the magnetic-field region, and the voice coil is mounted on the fin as claimed.

Regarding claims 16-19, Larson further discloses the acoustic transducer, comprising at least three voice coils and further comprising three fins, where one of the voice coils is mounted on each of the fins (Fig. 1) as claimed.

Regarding claims 20-23, Larson further discloses the acoustic transducer, where the projection surface and the fin are formed from a single sheet of material (Fig. 6) as claimed.

Regarding claims 24-25, Larson further discloses the acoustic transducer, comprising a filler material (29) attached to the projection surface (32), and a second sheet of material (30)

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attached to the filler material, where the filler material and the second sheet provide additional rigidity to the projection surface (Fig. 2).

Regarding claims 28-29, Larson further discloses the acoustic transducer, comprising a side surface (20) connected at an angle (Fig. 2) to the projection surface, where the side surface is operatively attached to the frame as claimed.

Regarding claims 40-42, Larson further discloses the acoustic transducer, where the voice coil (36-40) comprises a metal selected from the group consisting of silver, gold, aluminum, copper, and mixtures thereof as inherently claimed.

Method claims 66-67 are similar to claims 1, 5-6, 16-25, 28-29 and 40-42 except for being couched in method terminology; such methods would be inherent when the structure is shown in the references.

8. Claims 1 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al. (U. S. Pat. - 6,859,544).

Regarding claim 1, Kato et al. disclose an acoustic transducer comprising: a frame (2 and 11); a diaphragm (12) having a substantially planar projection surface, where the diaphragm is operatively attached to the frame (Fig. 5); a magnet structure (7) mounted on the frame, where the magnet structure produces a magnetic-field region; and an electrically conductive voice coil (14a) coupled to the diaphragm and extending out of a plane of the projection surface; where the voice coil resides at least partially in the magnetic-field region as claimed.

Regarding claims 9-10, Kato et al. further disclose the acoustic transducer, where the magnet structure comprises a magnet and a portion of the frame (Fig. 5).



*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 11-12 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson (U. S. Pat. - 4,536,623).

Regarding claims 11-12, Larson may not clearly teach a non-ferromagnetic frame as claimed. Since providing suitable non-ferromagnetic material for making a frame of a transducer is very well known in the art, it therefore would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide suitable non-ferromagnetic material, such as plastic, for the frame of the transducer as an alternate choice, in order to efficiently and effectively manufacturing the transducer.

Regarding claim 33, Larson does not clearly teach an electromagnet as claimed. Since providing suitable an electromagnet for a transducer is very well known in the art, it therefore would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide suitable electromagnet for the transducer as an alternate choice, in order to provide transducer with desirable acoustic characteristics, such as noise reduction.

10. Claims 43 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carne et al. (U. S. Pat. - 6,285,773).

Regarding claim 43, Larson may not clearly teach an insulated metal wire as claimed. Since providing suitable insulated metal wire for making a voice coil of a transducer is very well known in the art, it therefore would have been obvious to one having ordinary skill in the art at

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the time the invention was made to be motivated to provide suitable insulated metal wire for making a voice coil of a transducer, in order to efficiently and effectively manufacturing the transducer.

Regarding claim 45, Larson may not clearly teach one cone-type transducer as claimed. Since providing suitable cone-type transducer and a panel type transducer for making a compound loudspeaker (please see class 381, subclass 182) is very well known in the art, it therefore would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide suitable cone-type transducer and a panel type transducer for a compound loudspeaker, in order to efficiently and effectively manufacturing the compound loudspeaker.

Regarding claim 46, Larson may not clearly teach a crossover as claimed. Since providing suitable crossover for making an acoustic device is very well known in the art, it therefore would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide suitable crossover for the acoustic transducer, in order to efficiently and effectively manufacturing the acoustic device.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Suhan Ni** whose telephone number is (571)-272-7505, and the number for fax machine is (571)-273-7505. The examiner can normally be reached on Tuesday and Thursday from 10:00 am to 8:00 pm, and may be reached on Monday, Wednesday and

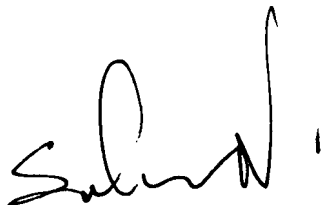
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Friday from 10:00 am to 8:00 pm. If it is necessary, the examiner's supervisor, **Sinh N. Tran**, can be reached at **(571)-272-7564**.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (**PAIR**) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

14. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is **(571)-272-2600**, or please see <http://www.uspto.gov/web/info/2600>.

03/26/2007

A handwritten signature in black ink, appearing to read 'Suhan N.', with a stylized flourish at the end.

**SUHAN N**  
**PRIMARY EXAMINER**